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AUTHOR Curtis, Carroll A.
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INSTITUTION Pennsylvania State Dept. of Education, Harrisburg.
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ABSTRACT

The principle of supply and demand has been chosen to capture and present quantitatively an important data source for describing employment potential. The Pennsylvania State Occupational Information Coordinating Committee has developed an Occupational Information System (OIS) and companion microcomputer version (Micro-OIS). This system contains data on the demand for workers (a prediction of annual anticipated job openings for specific occupations) and supply of workers (actual data from completers of formal training programs). To use this information, educational planners need to understand the structure of the published data. Program planning starts with an inventory of students. The educational planner can then take an inventory of the universe of occupations including the employers who provide the work. This occupational inventory of local employment options must include specific information on employers, recruitment methods, worker skills, and the way to learn these skills. Finally, the planner needs to take an inventory of the universe of educational programs including resources available to be committed to educational programs. (Checklists are provided to aid the planner in deciding when to establish a new vocational program or terminate an existing one.) (YLB)

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Prepared by: Carroll Curtis, Head
Research and Planning Section

Pennsylvania Department of Education
333 Market Street
Harrisburg, PA 17126-0333

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USING LABOR MARKET DATA FOR PROGRAM PLANNING

Introduction

The primary mission of our educational system is to prepare young people to meet the challenges of the future. One of these greatest challenges is to maintain a productive and rewarding career(s) throughout one's lifetime. Attempting to anticipate careers that will offer the greatest potential and the skills required to grow in those careers is a formidable task for educators. Formidable indeed when one must project decades into the future in order to be prepared with instructional facilities, equipment, professional staff and other resources needed to offer the right programs.

Realizing the importance of this issue, considerable resources have been directed toward helping educators be more systematic in documenting their training needs and planning programs to meet those needs. The principle of supply and demand has been chosen to capture and quantitatively present an important data source for describing employment potential.

Supply/Demand Model

An Occupational Information System (OIS) and companion microcomputer version (Micro-OIS) has been developed by the Pennsylvania State Occupational Information Coordinating Committee in cooperation with the Departments of Education and Labor and Industry. This system contains data on the demand for workers and supply of workers available to meet this demand. Statewide data is available as well as data for substate regions served by JTPA service delivery areas. Information on the OIS and its use is available from any of the agencies listed above.

In the OIS, demand data contains a prediction of annual anticipated job openings for specific occupations in a given geographic area. It is based on historical data about the number of people employed in these occupations, actual turnover data and an estimation of the positive or negative growth in industries that nurture the occupations. The accuracy of these data is primarily dependent upon the predictability of the industries and consistency in the proportion of specific occupations within those industries. Occupations that experience little variation are easiest but, of course, least useful to predict.

Supply is defined as the number of people available to fill occupational vacancies. In actuality, supply comes from many sources; primarily from people already working but willing to change, but also from people not employed and from recent completers of formal training programs. In the published OIS supply/demand model, it is essential that the user understand that supply is limited to actual data from completers of specific occupational training programs. It is an underestimate in that it does not include supply from other sources but an overestimate of completers who actually plan to seek related employment.

A complex array of social and economic forces impact on the concept of supply and demand. Demand is controlled by industry growth (both positive and negative) and technology that changes the efficiency of work and how it is done. Published supply, a documentation of the size of specific training programs, reflects the responsiveness of trainees and trainers to anticipated employment opportunities.

Supply and demand data is effective and precise for summarizing certain areas of past and present labor market activity. From the outset, however, the user must appreciate the fact that future values represent a "best estimate" given conditions and knowledge at the time. Projection data, therefore, should be viewed in a relative rather than absolute sense and used accordingly.

No educational institution should knowingly or willingly place its students in a position of investing time in training that has little potential for either wage earning or personal use. How then can educational planners use the best information that is available to reduce the risk of spending time learning useless skills?

The Structure of Supply and Demand

First, the planner needs to better understand the structure of the published data. Supply or institutional training programs are classified on the basis of CIP (Classification of Instructional Programs) codes. These codes are assigned nationally for aggregating and reporting purposes. Occupations, on the other hand, are classified according to SOC (Standard Occupational Classification) codes. These different systems of coding are essential because training programs usually are titled more generally than job titles.

The coding systems are integrated for closely related CIPs and SOCs. In fact, where mobility and transfer of skills among training programs and occupations is extensive the CIPs and SOCs are grouped as a "subset" in the Occupational Information System (OIS). Related "subsets" are grouped in "sets."

In using published supply/demand data in a needs assessment activity, the subset is the primary level of data that should be used. Further, the data should represent the actual labor market area of the school district or AVTS. The occupational outlook may be identified in virtually hundreds of different jobs from reports that may be accessed through selective code or title searches.

Cautions in Using the Model

Although reports of projected demand and current institutional supply provide valuable information about labor market conditions, they do not provide the whole answer nor do they replace the need for further analysis and judgment. As one begins to use the data, a couple of typical situations immediately emerge that even the novice planner must recognize not to be led to erroneous conclusions.

First of all, it is not unusual that in some and often many of the established institutional training programs, published supply may exceed projected demand. The local planner should be prepared to expect this and not immediately conclude that these programs should be dismantled. The reasons for this are many:

- o It has not been established that a one-to-one relationship between supply and demand is the optimum condition. In fact, most people are convinced that it is not. Employers like and need to have options in whom they employ--as do potential employees.
- o Not every completer wants a job in the area trained. Students, particularly at the secondary level, select program areas for a variety of reasons. They elect programs to be with friends, to escape from less desirable learning situations, change their mind about their career or find more desirable employment opportunities in other areas.
- o Many completers decide to seek further training (including military). Further training not only delays their entry into the labor market but may expand considerably the geography and the occupational titles in which they eventually seek employment.
- o In spite of the analytical detail in preparing the data, not all of the supply or the demand can be documented. Even though the demand is the best information available, it nonetheless is a projection. If the relative proportion of any industry in the economy does not develop according to projection or the proportion of occupations within each industry deviates from expectation, there will be corresponding error in the projections.
- o The relatedness of skills or transferability of specific job skills is a matter of judgment not as easily classified as occupational titles. Particularly, basic skills and industrial discipline skills, but technical skills as well, can be utilized in occupations that do not appear related to the training. Programs in seemingly oversupplied areas may be successful by being of exceptional quality or by utilizing the work-simulated classroom environment to teach skills that are generalizable to a wide range of employment.

The second thing common to almost all labor market areas is the presence of occupational areas with high demand but little or no documented supply. This does not necessarily mean that you should establish training programs to prepare students for these occupations. Specifically, there is a high demand for workers in certain areas of food (particularly fast food), custodial, security, low level clerical and other similar occupations. These occupations are characterized by:

- o low skill;
- o low pay;
- o erratic and undesirable hours;
- o possibly undesirable working conditions;
- o little or no opportunity for advancement;
- o transitional part-time employment attractive primarily to students, housewives or retirees.

It is not the absence of supply but the absence of the need for formal training programs that would result in institutional supply in the OIS model that creates the mismatch. Actually, since little or no specific skills are required, the potential supply is virtually unlimited. The available supply, as indicated by the constant advertisements for workers is suppressed by the unattractiveness of the jobs themselves. In these jobs, the available supply is controlled by the marketplace, not by training institutions. Therefore, it makes little sense to offer training if little or no training is required. The schools should not accept responsibility for a shortage of applicants to fill these jobs. Unless a training program offers an employment option that individuals will aspire for, invest in and realize a benefit from the training, student participation will not and should not materialize.

Getting Started with Program Planning

Simply because published data does not always provide definitive answers on needed programs is no reason to procrastinate about program planning.

Start with an inventory of students. Schools have an obligation to help all students prepare for productive work. Schools do not control how many students are in the district nor do they have the option of directing students away from career preparation to learn only to care for home and family.

Therefore, the population in need of preparation for work is fixed. The options are not if the school will offer programs but what programs can be offered that will be most beneficial to the career preparation of students.

The choices students have and, therefore, the choices the school has are programs that provide preparation for:

- o skilled employment;
- o semiskilled employment;
- o further training for more highly skilled employment.

Students who select preparation for skilled or semiskilled employment will be impacted upon primarily by local labor market conditions. Characteristically, they seek and will accept employment only within a conservative commuting distance from home. Further training may eventually be sought through local adult education programs, for either personal or occupational purposes, but only after a period of time away from school.

In contrast, students who plan to seek additional training will involve themselves in experiences that will broaden their concept of the labor market area. Formal apprenticeship programs, the military, colleges and university study or enrollment in community college or trade school expand the mobility of students and cause them to consider a wider search for employment both geographically and in terms of skill requirements.

The school, therefore, needs to examine both the limited and extended definitions of labor market area to respond to career preparatory and job searching habits of students. Most students in turn adjust their aspirations to respond to publicized promising employment opportunities. To be too provincial in program planning or in career guidance limits the aspirations and, therefore, the opportunities of students. A labor market analysis that includes both geography and training requirements would be more useful for the guidance of students and for program planning than one that considers geography alone.

Inventory Occupations

The second thing the educational planner can do is to inventory the universe of occupations including the employers who provide the work. Within the local labor market area there is a universe of specific definable occupations where people are currently employed. These data can be obtained from census resources including the state occupational information system and from local surveys. With local adjustment for dramatic influx or exodus of specific industry, these data are the best measure of the universe of available occupations for skilled or semi-skilled program completers.

Regardless of whether supply/demand ratios are optimistic or not, these are the local employment options. There is little that can be done at the local school level to bring about much modification to these options. For the most part, additional occupations that develop from personal entrepreneurship or new and emerging occupations cannot account for an appreciable number of employees. Further, these latter occupations may not be secure or stable enough to warrant the development of specific new training programs. Rather, the additional skills required can, in most cases, better be treated by revising the content of existing offerings and expanding continuing education opportunities. Severe competition in the market place can best be met with exceptional quality in the training. The decision on breadth or depth of technical training depends on the nature of the options. Excellent basic skills and worker habits are always in demand.

Included in this occupational inventory must be specific information on who the employers are, how they currently recruit employees, what skills do their workers use and how these skills are best learned.

As indicated previously, this inventory will undoubtedly surface among the occupations an appreciable number of jobs that require little or no specific training. Additional analysis will be required to sort out those that have from those that do not have program development potential. Additional sources and additional analysis will also be required to identify and assess occupations from a broader labor market area that may be available with the aid of further training. Programs may then be designed that include skills that have immediate value in the marketplace or that provide a broader preparation to articulate with further training opportunities.

Review the Educational Programs

Finally, the planner needs to inventory the universe of educational programs including resources available to commit to educational programs.

It's relatively straightforward to inventory current programs as they are now structured. Curricular analysis can determine the intended occupational scope of each program; follow-up placement data reveals the success students have finding employment and the kind and quality of employment they are able to secure. Substandard placement rates (by local standards) can be traced to the cause. Inappropriate programs, inadequate curriculum or instruction, insufficient equipment or the absence of job placement activity need to be identified and remedied. Clearly, programs that offer lesser opportunities than one that could take its place need to be closed.

Since completers from any given school will be competing for jobs with all other contributors to local supply, it's not adequate to examine only the training programs from a single school. A listing of other contributors to institutional supply and their placement success contributes substantially to an understanding of the actual labor market conditions. An enhancement planned for the Occupational Information System is the capability to sort training programs by geographic and content variables.

Finally, the program inventory needs to include the potential for offering new or different programs. Unused space in existing programs, unused facilities or the capacity to modify existing facilities all need to be identified and documented.

Summary

Throughout this paper no distinction has been made between what is vocational and what is general or academic. This is intentional. The principles of supply and demand are the same for occupations on all levels as are the program planning strategies presented here. The distinction of what programs to manage as vocational can only be made after one has determined what skills need to be taught and in what concentration and duration to warrant approved vocational status. Even then the opportunity for students to elect portions of the vocational programs to enhance their personal skills or career objectives is an asset to the total educational program.

Since the most difficult program decisions deal with establishing a new vocational program or terminating an existing program, a checklist has been developed to aid the planner with those decisions. This list too is not necessarily exhaustive. Other local factors may dictate program decisions. Hopefully, the goal of creating a better match between education and the workplace will be retained.

WHEN TO START OR CLOSE A VOCATIONAL PROGRAM

You should consider starting a program if:

- o there is a significant unmet need for workers in a given occupation or related occupations, and
- o the relative opportunity for employment exceeds other options, and
- o the skill needed can best be learned in an institutional training setting, and

- o the skills needed quantitatively and qualitatively justify an institutional program, and
- o the occupations offer sufficient reward (salary, status, etc.) that individuals would aspire for the jobs and invest in preparatory training, or
- o there is a need for alternative training or learning situations, or
- o there is an opportunity to articulate with other institutions for advanced training

You should consider terminating a program if:

- o student enrollments no longer justify the specific program.
- o the occupations are no longer relevant or in demand.
- o skill level and educational level do not match.
- o completers are not finding productive employment.
- o another program offers better alternatives.